

**CLAIMS**

1. A line light irradiation device comprising  
multiple light emitting parts each of which is  
provided with a light irradiating part where multiple  
5 optical fibers are thickly arranged in a line or in multiple  
lines with light leading out end portions of the multiple  
optical fibers forming a straight line of a predetermined  
width, and a columnar lens arranged to extend along a  
direction of the line in front of the light irradiating part  
10 in pairs, and that irradiate line light that converges into  
a straight line and  
a holding body that is arranged to face to a work as  
being an object on which the line light is to be irradiated,  
on which a monitoring bore is arranged to penetrate in order  
15 to monitor the work, and that holds the light emitting parts  
so that each optical axis face of the line light irradiated  
from each of the light emitting parts crosses on a  
predetermined straight line.
- 20 2. The line light irradiation device described in claim 1,  
wherein each light emitting part is arranged on the holding  
body so that the optical axis face of the line light  
irradiated from each light emitting part is arranged  
radially viewed from the above-mentioned direction of the  
25 line.
3. The line light irradiation device described in claim 1,  
or 2, wherein each columnar lens is arranged generally on a

straight line viewed from the above-mentioned direction of the line.

4. The line light irradiation device described in claim 1, 2, or 3, wherein the light irradiating part further comprises a pair of pinching plates and the pinching plates hold the light leading out end portions of the multiple optical fibers by pinching them.

5. The line light irradiation device described in claim 1, 2, 3, or 4 wherein a binding part is formed by binding light introducing end portions of the optical fibers and light from a light source is introduced into the binding part.

6. The line light irradiation device described in claim 5 wherein the light source is supported by the holding body and each length of all or a part of the optical fibers is made to be different so that the binding part is located to deviate to either one of directions with respect to a center line of the light irradiating part.

7. The line light irradiation device described in claim 1, 2, 3, 4, 5, or 6 wherein the light source that introduces light into the optical fibers is a power LED that can continuously flow current greater than or equal to 200mA.

8. The line light irradiation device described in claim 1, 2, 3, 4, 5, 6, or 7 wherein a distance between the light

irradiating part and the columnar lens can be varied.

9. The line light irradiation device described in claim 1, 2,  
3, 4, 5, 6, 7, or 8 wherein the light emitting part is  
5 rotatably around a rotational axis that is parallel to the  
direction of the line and the rotational angle can be set.

10. The line light irradiation device described in claim 1,  
2, 3, 4, 5, 6, 7, 8, or 9 wherein the multiple light  
10 irradiating parts are arranged serially along the above-  
mentioned direction of the line.

11. The line light irradiation device described in claim 10  
wherein each length of the light emitting part is identical.  
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12. The line light irradiation device described in claim 10,  
or 11 wherein the light source is arranged for each of the  
light irradiating parts individually.

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